FIG. 1A

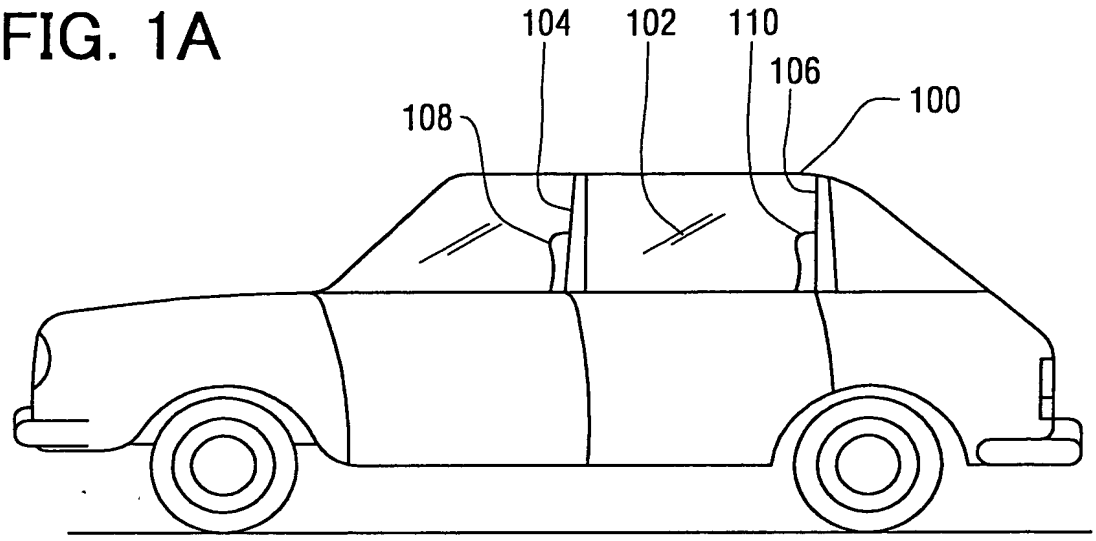

104
102
110
106
100
108

FIG. 1B

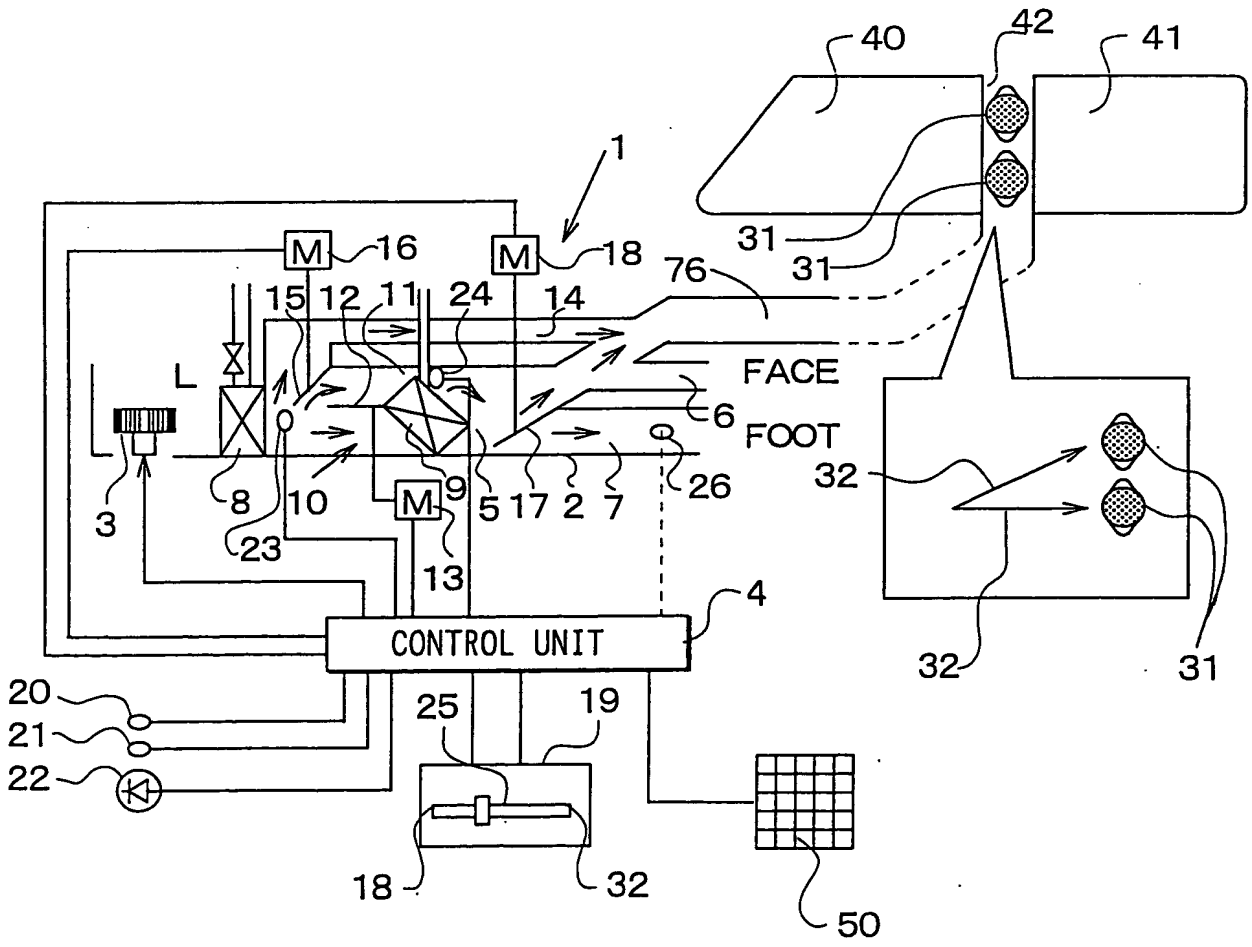

40
42
41
1
M
16
M
18
31
31
76
15
12
11
24
14
L
FACE
6
FOOT
32
3
8
10
M
9
5
17
2
7
26
23
13
4
CONTROL UNIT
32
31
20
21
22
25
19
18
32
50

FIG. 2

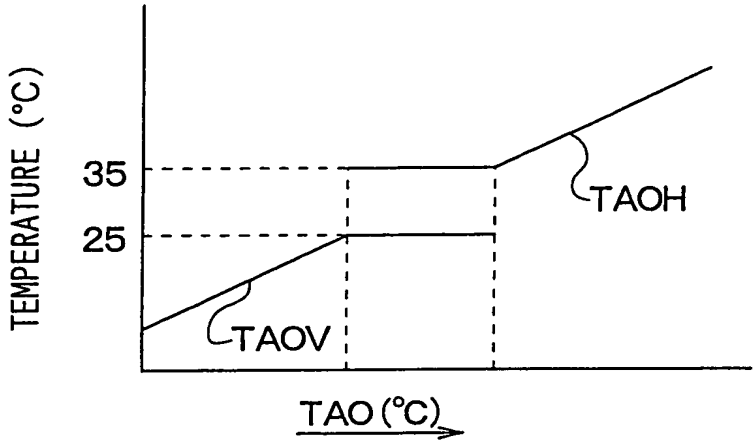


FIG. 3

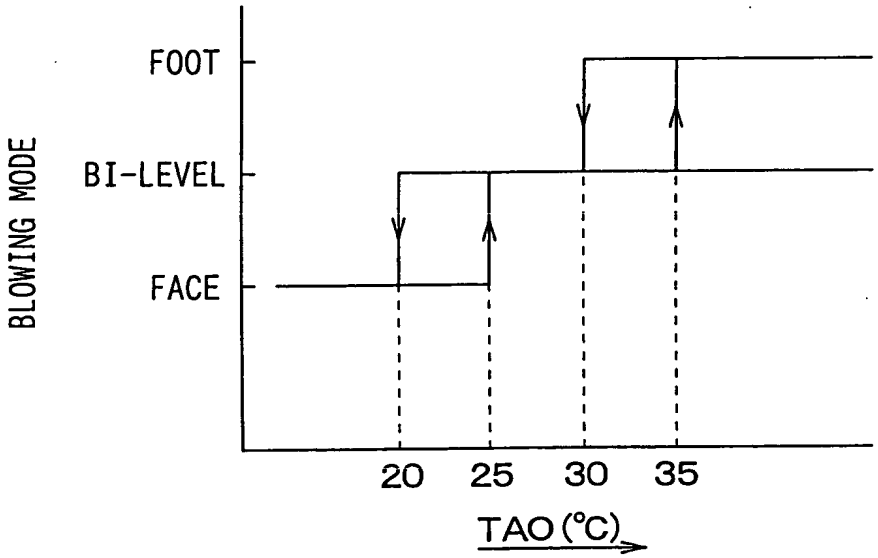


FIG. 4

BLOWING MODE	TARGET BLOWING TEMPERATURE	DEGREE OF OPENING OF A/M DAMPER	BYPASS OPEN/CLOSE
FACE BI-LEVEL	TAOV	——	SWBn
	TAOH	SWn	——
FOOT	TAOH	SWn	CLOSE

FIG. 5

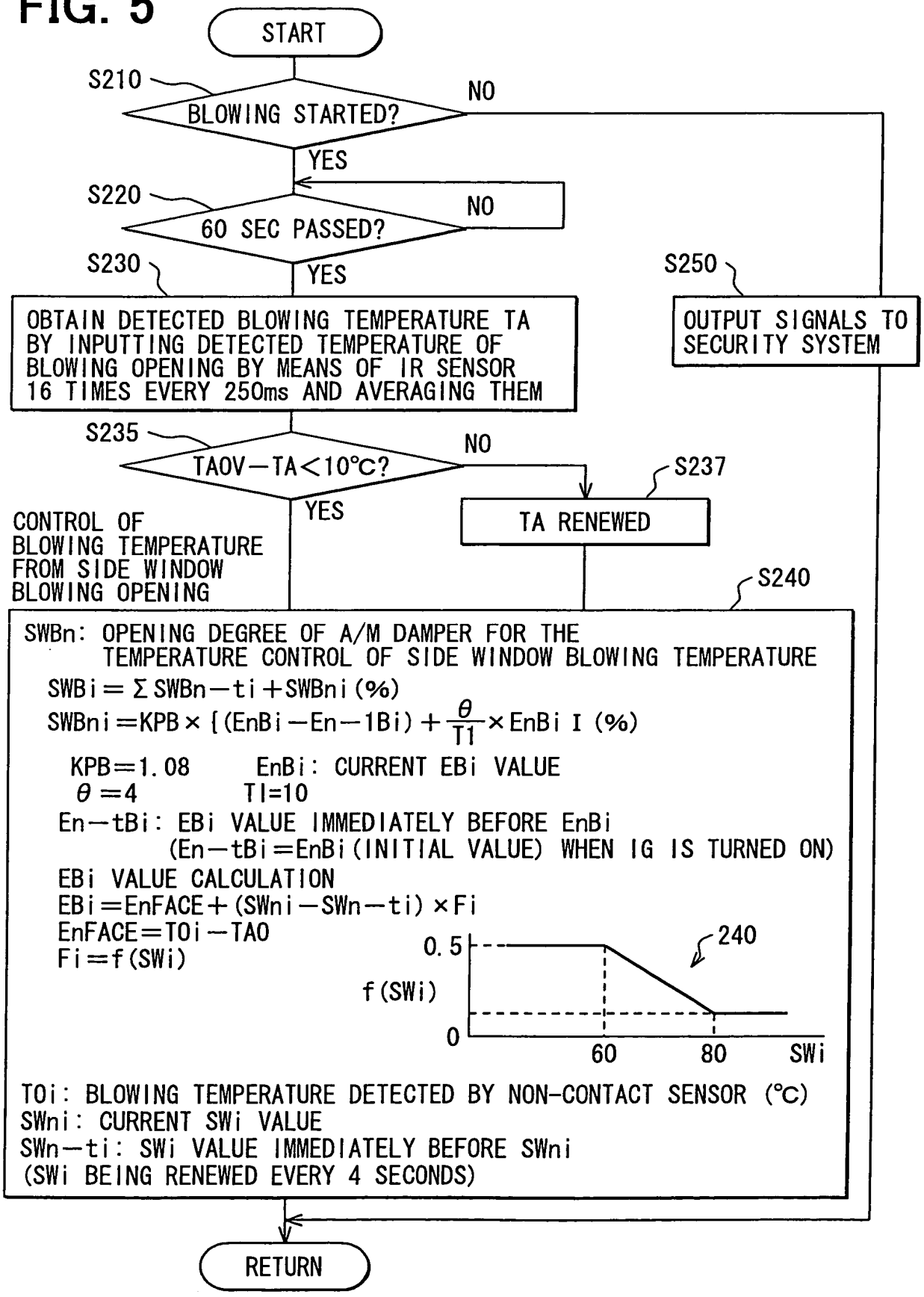
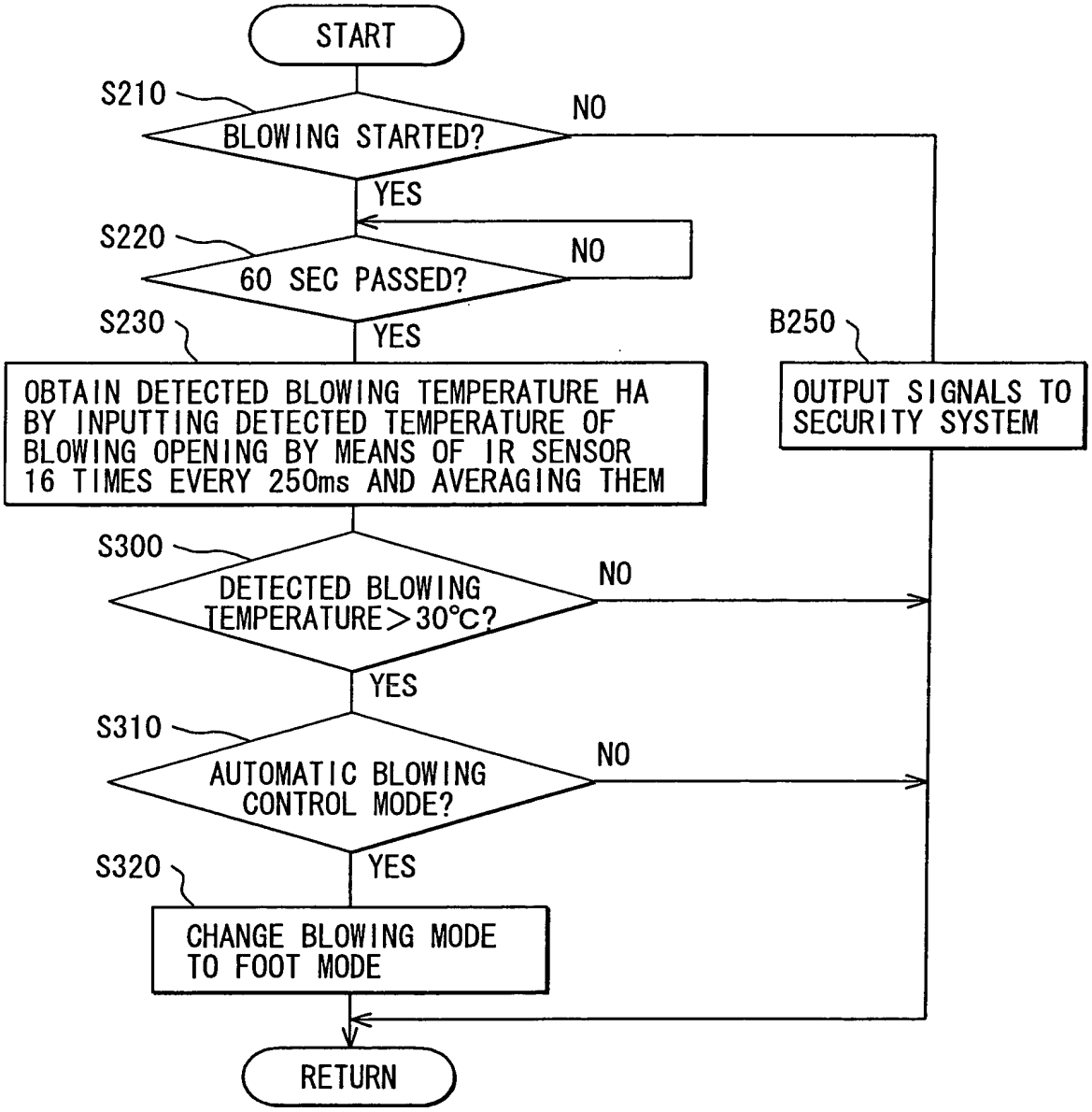
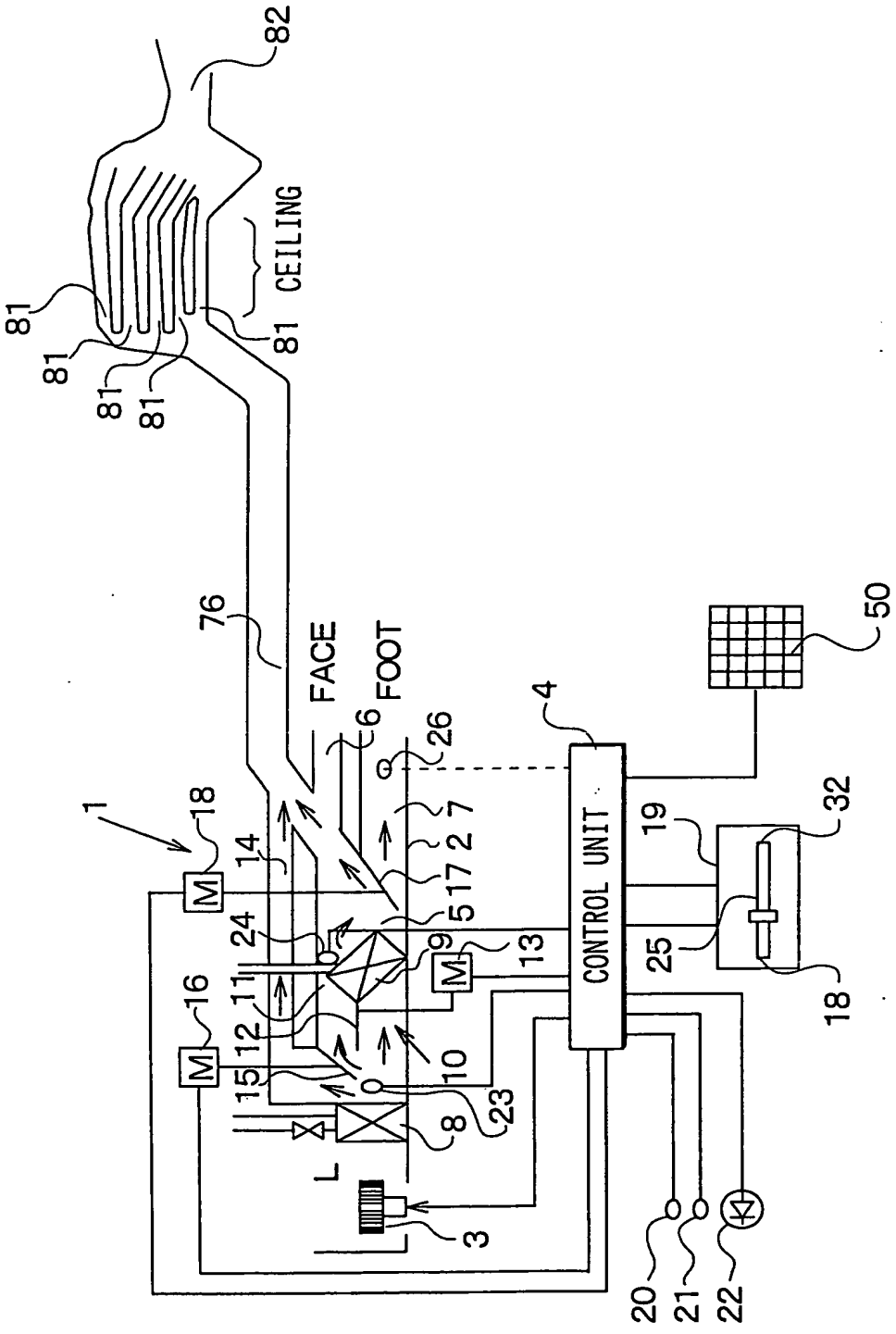

START
S210
BLOWING STARTED?
NO
YES
S220
60 SEC PASSED?
NO
YES
S230
OBTAIN DETECTED BLOWING TEMPERATURE TA BY INPUTTING DETECTED TEMPERATURE OF BLOWING OPENING BY MEANS OF IR SENSOR 16 TIMES EVERY 250ms AND AVERAGING THEM
S250
OUTPUT SIGNALS TO SECURITY SYSTEM
S235
TAOV−TA<10°C?
NO
YES
S237
TA RENEWED
CONTROL OF BLOWING TEMPERATURE FROM SIDE WINDOW BLOWING OPENING
S240
SWBn: OPENING DEGREE OF A/M DAMPER FOR THE TEMPERATURE CONTROL OF SIDE WINDOW BLOWING TEMPERATURE
SWBi = Σ SWBn−ti + SWBni (%)
SWBni = KPB × {(EnBi − En−1Bi) + θ/T1 × EnBi I (%)
KPB=1.08 EnBi: CURRENT EBi VALUE
θ=4 T1=10
En−tBi: EBi VALUE IMMEDIATELY BEFORE EnBi
(En−tBi=EnBi(INITIAL VALUE) WHEN IG IS TURNED ON)
EBi VALUE CALCULATION
EBi=EnFACE+(SWni−SWn−ti)×Fi
EnFACE=TOi−TAO
Fi=f(SWi)
0.5
f(SWi)
0
60
80
SWi
240
TOi: BLOWING TEMPERATURE DETECTED BY NON-CONTACT SENSOR (°C)
SWni: CURRENT SWi VALUE
SWn−ti: SWi VALUE IMMEDIATELY BEFORE SWni
(SWi BEING RENEWED EVERY 4 SECONDS)
RETURN

FIG. 6


START
S210
BLOWING STARTED?
NO
YES
S220
60 SEC PASSED?
NO
YES
S230
OBTAIN DETECTED BLOWING TEMPERATURE HA BY INPUTTING DETECTED TEMPERATURE OF BLOWING OPENING BY MEANS OF IR SENSOR 16 TIMES EVERY 250ms AND AVERAGING THEM
B250
OUTPUT SIGNALS TO SECURITY SYSTEM
S300
DETECTED BLOWING TEMPERATURE>30°C?
NO
YES
S310
AUTOMATIC BLOWING CONTROL MODE?
NO
YES
S320
CHANGE BLOWING MODE TO FOOT MODE
RETURN


82
CEILING
81
81
81
81
81
76
FACE
FOOT
6
26
4
50
1
18
14
M
24
17
2
7
5
9
13
CONTROL UNIT
19
32
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18
M
16
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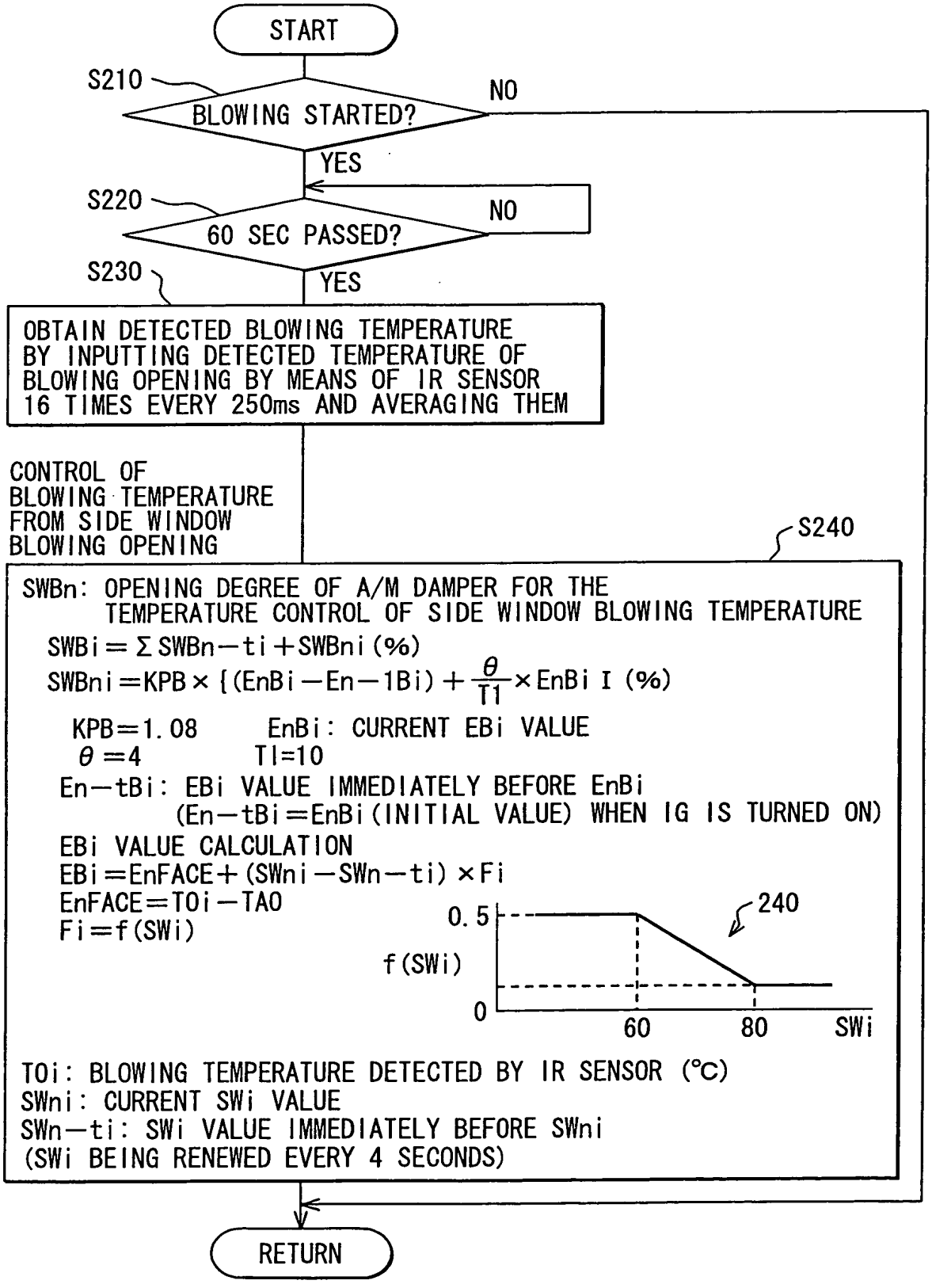
FIG. 7

FIG. 8


START
S210
BLOWING STARTED?
NO
YES
S220
60 SEC PASSED?
NO
YES
S230
OBTAIN DETECTED BLOWING TEMPERATURE BY INPUTTING DETECTED TEMPERATURE OF BLOWING OPENING BY MEANS OF IR SENSOR 16 TIMES EVERY 250ms AND AVERAGING THEM
CONTROL OF BLOWING TEMPERATURE FROM SIDE WINDOW BLOWING OPENING
S240
SWBn: OPENING DEGREE OF A/M DAMPER FOR THE TEMPERATURE CONTROL OF SIDE WINDOW BLOWING TEMPERATURE
SWBi = Σ SWBn−ti + SWBni (%)
SWBni = KPB × {(EnBi − En−1Bi) + θ/T1 × EnBi I (%)
KPB=1.08 EnBi: CURRENT EBi VALUE
θ=4 T1=10
En−tBi: EBi VALUE IMMEDIATELY BEFORE EnBi
(En−tBi=EnBi (INITIAL VALUE) WHEN IG IS TURNED ON)
EBi VALUE CALCULATION
EBi=EnFACE+(SWni−SWn−ti)×Fi
EnFACE=TOi−TAO
Fi=f(SWi)
0.5
f(SWi)
0
240
60
80
SWi
TOi: BLOWING TEMPERATURE DETECTED BY IR SENSOR (°C)
SWni: CURRENT SWi VALUE
SWn−ti: SWi VALUE IMMEDIATELY BEFORE SWni
(SWi BEING RENEWED EVERY 4 SECONDS)
RETURN